

July 19, 2005

SHAW-MC-CK10-0967
Project No. 796887

Mr. Lee Coker
U.S. Army Corps of Engineers, Mobile District
Attn: EN-GE/Lee Coker
109 St. Joseph Street
Mobile, Alabama 36602

Subject: Letter Work Plan for Investigation of AWWSB Tank Sites Near BBGR Ranges

Dear Mr. Coker:

Shaw Environmental, Inc. (Shaw) will conduct investigations at two future Anniston Water Works and Sewer Board (AWWSB) tank sites located near the Baby Bains Gap Road (BBGR) Ranges at Fort McClellan (FTMC), Alabama. This work plan describes the activities to be performed as part of the AWWSB tank sites investigation, which is being conducted to facilitate transfer of these properties from the Army to the AWWSB. The work will be performed in accordance with the provisions of Prime Contract DACA21-96-D-0018 with the U.S. Army Corps of Engineers (USACE), Mobile District.

Introduction

The BBGR Ranges are comprised of eight sites that lie nearly adjacent to each other in the central section of the FTMC Main Post: Range 20, Range 25, Range 28, Former Range 25 East, Range 23, Range 26, the Ranges South of Range 25, and Range 18. The AWWSB tank sites – the Snap Lane Tank Site and the Bains Gap Road Tank Site– are located adjacent to former Range 23 and former Range 25, respectively (Figure 1). Range 23 and Range 25 were small-arms ranges that were previously investigated by Shaw during a remedial investigation (RI) (Shaw, 2004). However, the tank sites are located outside the RI area of investigation and no samples were collected during the RI. Therefore, investigation of these areas is required prior to property transfer.

Purpose and Scope

The purpose of this investigation is to determine the presence or absence of metals-contaminated soils within the two AWWSB tank site boundaries. To fulfill the requirements of the SOW, the following tasks will be completed: work plan preparation, investigation field work including an x-ray fluorescence (XRF) survey and confirmation soil sampling and analysis, and preparation of

an investigation report and decision documents. Unexploded ordnance (UXO) support is also required during field activities.

This work plan consists of a sampling and analysis plan, a safety and health plan (Appendix A), and a UXO Safety Plan (Appendix B). This work plan will be used in conjunction with FTMC installation-wide work plan (IT Corporation [IT], 2002a, 1998), and the SAP (IT, 2002b; 2000).

Site Descriptions and RI Summary

Range 23. The AWWSB tank site is located along Snap Lane, adjacent to the southwest corner of the Range 23 RI study area (Figure 1). The tank site covers approximately 5.8 acres. Range 23 was used from 1951 until Base closure. Weapons fired at this range included the M-16 automatic rifle and M-16 with tracer. The EBS further reports evidence of artillery ordnance impact at Range 23, as Base personnel have found shell fragments and an unexploded mortar round in the area. According to the *Archives Search Report* (ASR), Range 23 (OA-41) started the Inter-War period as a pistol range and later became a rifle and machine gun range, with multiple orientations and layouts used during this period (USACE, 2001). Further, the ASR reports that a part of this area was used in Combat Range #1 (OA-43).

Range 25. The AWWSB tank site is located along Bains Gap Road, adjacent to the eastern boundary of the Range 25 RI study area (Figure 1). The tank site covers approximately 6.1 acres. Range 25 is one of the oldest and most used ranges at FTMC and may have been in use as early as the 1920s. Long-time FTMC personnel believe that Range 25 was constructed as a 600-yard known-distance range for training using M-1903 Springfield rifles (.30 caliber) and M-1 Garand rifles (.30 caliber). This range was also reportedly used as a machine gun range. FTMC Range Control records indicate that the range was used for M-14 training. Day-and-night-phase firing was practiced here. The EBS states that weapons fired at this range included various small arms, including the M-14, M-16, M-1, and M-60 (with tracers) rifles. The firing direction was to the northeast.

RI Summary. Based on the results of the RI, the primary environmental concern at the BBGR Ranges is the prevalence of metals contamination (primarily lead) in surface soil. The source of contamination is bullets and bullet fragments from weapons training. Based on the subsurface soil sampling data, the contamination is almost exclusively limited to surface soils (i.e., upper 12 inches).

Field Investigation Activities

This section describes the field activities to be performed during the investigation of the AWWSB tank sites, including UXO avoidance, site surveying and establishment of sampling grids, XRF soil screening, and confirmation sampling and analysis.

UXO Avoidance. Prior to performing any intrusive field work, UXO avoidance will be performed within the areas to be investigated following methodology outlined in the UXO Safety Plan (Appendix B) and the SAP. Shaw UXO personnel will use a low-sensitivity magnetometer to perform a surface sweep of the areas of investigation prior to site access. After the sites are cleared for access, sample locations will be monitored by UXO personnel following procedures outlined in the SAP.

Site Surveying and Establishment of Sampling Grids. A registered land surveyor in the state of Alabama will survey the site including locating and establishing sampling grids over the tank site property boundaries. The sampling grids, consisting of 100-foot by 100-foot grid squares, will be established over the entire area of the AWWSB tank sites, as shown on Figures 2 and 3. The grids will not be expanded based on the field data. No sampling will be performed outside the immediate tank site areas.

XRF Sampling and Analysis. During the initial phase of investigation, metals analysis will be performed on-site using a portable XRF instrument to provide real-time data and optimize the analytical program. Shaw will provide a qualified person to perform XRF analysis; collect, manage, and document samples for on-site and off-site analyses; and perform on-site data management. XRF sampling will occur at each of the grid nodes within the previously established sampling grids. At the Bains Gap Road Tank Site, 34 samples are planned (Figure 2) and at the Snap Lane Tank Site, 30 samples are planned (Figure 3). The grid node designations and survey coordinates are provided in Table 1.

A Niton 733 portable XRF (or equivalent) will be used to perform the metals analysis, following procedures described in the FTMC SAP. The instrument will be calibrated daily using a blank and three certified standard reference materials of known lead concentrations. The instrument readings will agree within +/- 20% relative percent difference of the certified value for field sample analysis to continue.

At each grid node location, a sample will be collected from the upper 3 inches of soil using a steel sampling trowel and placed in a disposable aluminum pan. The sample will be homogenized and rocks, vegetative matter, bullets, shot, and bullet fragments will be removed by the analyst prior to analysis. If bullets, shot, or bullet fragments are found in the sample, this information will be noted on the sample collection/analysis sheet. If the sample cannot be thoroughly homogenized and large particle-size differences exist, or if the sample contains excessive moisture, the analyst may elect to take the sample to the on-site laboratory to further prepare the sample by drying, crushing, and sieving. If so, the sample will be heated at 120 degrees Celsius for approximately 4 hours or until dry, crushed with a decontaminated ceramic mortar and pestle, and passed through a standard #10 sieve (2 millimeter pore size). The resulting soil will be collected on wax paper and analyzed.

Once homogenized (either in the field or laboratory-prepared), the soil will be directly analyzed using the XRF at the sample location. Data from the analysis are manually recorded from the instrument display by the analyst on the sample collection/analysis form and are automatically stored in the instrument data logger. Data will be downloaded to a laptop computer at the end of each day's analysis and transferred into an Excel™ spreadsheet for subsequent data management and reporting.

Offsite Confirmational Analysis. Ten percent of the XRF-analyzed samples will be sent to an offsite analytical laboratory for confirmational metals analysis using EPA Method 6010B (Table 2). Assuming that a total of 64 XRF samples are analyzed, approximately 7 samples will be sent for offsite confirmational analysis. Final data deliverables will include Level III data packages and electronic data deliverables (EDD). Data packages and EDDs are due on a standard 4-week turnaround time and will be sent to the Shaw office in Knoxville. To ensure consistency in analytical data, all analytical services will be provided under subcontract to Shaw by EMAX

Laboratories, Inc. in Torrance, California. EMAX is currently validated by the USACE Hazardous, Toxic, and Radioactive Waste Center of Expertise for the applicable methods.

Typical field quality assurance/quality control (QA/QC) samples will be collected as described in the FTMC SAP. These include field duplicates, matrix spike/matrix spike duplicates (MS/MSD), and weekly equipment rinsate blanks. Standard laboratory batch QC will also be performed. Trip blanks are not anticipated. The QA/QC sample designations and frequency of collection are summarized in Table 2. The XRF soil samples will be assigned unique sample identifications based on the sample grid system. The grid system nomenclature is comprised of the tank site identification (ID) and grid node location. These IDs will be carried forward in identifying the samples sent to the laboratory for offsite analysis.

Sample Documentation, Custody, and Tracking. Sample documentation, custody, and tracking will follow the procedures described in the FTMC SAP. Combination sample collection and analysis forms will be used to document the XRF field screening results. Custody will be maintained at all times by the Shaw sampling team prior to shipment to EMAX using the typical chain-of-custody forms cited in the SAP. The XRF analyst will maintain control of the samples collected and track the samples through the various XRF screening, reporting, and confirmation analysis stages.

Data Management and Validation. The final data packages and EDDs will be sent from the analytical laboratory to the Shaw office in Knoxville, Tennessee, for routine data management, validation, and reporting. The investigation data will be managed using ShawView™, an Oracle-based information management system. The reported analytical data will be validated in accordance with EPA National Functional Guidelines by Level III criteria. The XRF analyst will maintain the XRF data during all onsite activities. The analyst will report the results of the XRF screening analysis and select the samples for offsite laboratory analysis.

Investigation Report and Decision Documents

Upon completion of the fieldwork, laboratory analyses, and data validation and evaluation, Shaw will prepare a draft report summarizing the investigations at both AWWSB tank sites. The report will contain a description of the field activities, including maps showing the site boundaries, sample locations, and other pertinent site information, a summary of the analytical results, and conclusions and recommendations. Following incorporation of comments on the draft report, Shaw will issue the final report.

To facilitate land transfer, Shaw will prepare on behalf of the Army a decision document for each of the AWWSB tank sites. The decision documents will summarize the investigation results and formally document the Army's decision regarding the disposition of these properties.

Schedule

Shaw will immediately begin field activities following mobilization to the site. Surveyors will lay out and stake the sampling grid in one day. Sampling and XRF analysis will begin the next day and last approximately 2 weeks. At the end of the second week, selected samples will be shipped to EMAX for confirmational analysis. Laboratory analysis and reporting will take four weeks from sample receipt. Once the final data packages are received and reviewed, Shaw will issue the investigation report within 2 weeks.

References

Environmental Science and Engineering, Inc. (ESE), 1998, ***Final Environmental Baseline Survey, Fort McClellan, Alabama***, prepared for the U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland, January.

IT Corporation, 2002a, ***Draft Installation-Wide Work Plan, Fort McClellan, Calhoun County, Alabama***, Revision 3, February.

IT Corporation, 2002b, ***Draft Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama***, Revision 3, February.

IT Corporation, 2000, ***Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama***, March.

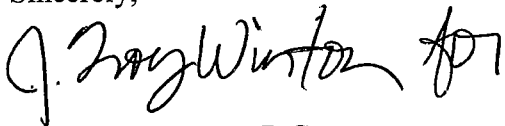
IT Corporation, 1998, ***Final Installation-Wide Work Plan, Fort McClellan, Calhoun County, Alabama***, prepared for the U.S. Army Corps of Engineers, Mobile District, August.

Shaw Environmental, Inc. (Shaw), 2004, ***Draft Remedial Investigation Report, Baby Bains Gap Road Ranges, Fort McClellan, Calhoun County, Alabama***, July.

U.S. Army Corps of Engineers (USACE), 2001, ***Archives Search Report, Maps, Fort McClellan, Anniston, Alabama***, Revision 1, September.

At your request, I have distributed copies of this work plan as indicated below. If you have questions, or need further information, please contact me at (865) 694-7361.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Gray Winter" followed by a stylized monogram or initials.

Stephen G. Moran, P.G.
Project Manager

Attachments

Distribution: Lisa Holstein, FTMC (7 copies; 2 CDs)
Shana Decker, ADEM (2 copies, 1 CD)
Doyle Brittain, EPA Region 4 (1 copy; 1 CD)
Miki Schneider, JPA (1 copy)
Greg Schank, Matrix Environmental (1 copy)
Michelle Beckman, Matrix Environmental (1 copy)

TABLES

Table 1

XRF Grid Node Locations and Survey Coordinates
Investigation of AWWSB Tanks Sites at BBGR Ranges
Fort McClellan, Alabama

Bains Gap Road Tank Site - 34 Locations		
Grid Node	Northing	Easting
NW100,SW200	1167468.21	677766.68
NW100,SW300	1167396.34	677697.23
NW200,SW100	1167609.71	677764.07
NW200,SW200	1167537.66	677694.63
NW200,SW300	1167465.61	677625.36
NW200,SW400	1167393.73	677556.09
NW300,SW100	1167679.15	677692.20
NW300,SW200	1167607.28	677622.76
NW300,SW300	1167535.23	677553.31
NW300,SW400	1167463.18	677484.04
NW400,SW100	1167748.59	677620.15
NW400,SW200	1167676.37	677550.71
NW400,SW300	1167604.32	677481.09
NW400,SW400	1167532.45	677411.82
NW500,SW100	1167817.87	677548.10
NW500,SW200	1167745.99	677478.66
NW500,SW300	1167673.94	677409.21
NW500,SW400	1167602.07	677339.94
NW600,SW100	1167887.48	677476.05
NW600,SW200	1167815.43	677406.78
NW600,SW300	1167743.39	677337.16
NW600,SW400	1167671.34	677267.89
NW700,SW100	1167956.75	677404.01
NW700,SW200	1167884.71	677334.56
NW700,SW300	1167812.83	677265.29
NW700,SW400	1167740.78	677195.85
NW800,SW100	1168026.03	677331.96
NW800,SW200	1167954.15	677262.69
NW800,SW300	1167882.10	677193.41
NW800,SW400	1167810.05	677123.80
NW900,SW100	1168095.47	677260.08
NW900,SW200	1168023.42	677190.81
NW900,SW300	1167951.55	677121.37
NW900,SW400	1167879.32	677051.92

Snap Lane Tank Site - 30 Locations		
Grid Node	Northing	Easting
N0,W100	1163863.80	675670.42
N100,W100	1163959.11	675639.69
N100,W200	1163928.38	675544.90
N200,W100	1164054.42	675609.13
N200,W200	1164023.52	675514.00
N200,W300	1163992.79	675418.51
N300,W100	1164149.39	675578.41
N300,W200	1164118.83	675483.27
N300,W300	1164087.93	675388.13
N300,W400	1164057.37	675292.82
N400,W100	1164244.70	675547.68
N400,W200	1164214.14	675452.54
N400,W300	1164183.24	675357.22
N400,W400	1164152.69	675262.09
N500,W100	1164339.84	675517.12
N500,W200	1164308.94	675421.98
N500,W300	1164278.55	675326.67
N500,W400	1164247.65	675231.36
N600,W100	1164434.80	675486.39
N600,W200	1164404.42	675391.08
N600,W300	1164373.52	675295.94
N600,W400	1164342.96	675200.63
N700,W100	1164530.12	675455.49
N700,W200	1164499.39	675360.52
N700,W300	1164468.83	675265.21
N700,W400	1164438.10	675169.90
N800,W100	1164625.43	675424.76
N800,W200	1164594.70	675329.79
N800,W300	1164563.80	675234.66
N800,W400	1164533.07	675139.34

Table 2

**Confirmation Soil Sample Designations and QA/QC Samples
Investigation of AWWSB Tank Sites at BBGR Ranges
Fort McClellan, Alabama**

Sample Location ^a	Sample Designation	Sample Depth (ft bgs)	QA/QC Samples		Analytical Parameters
			Field Duplicates	MS/MSD	
BGTank-NW __, SW __	BGTank-NW __, SW __ -SS-SU0001-XRF	0-0.5	BGTank-NW __, SW __ -SS-SN0003-FD		TAL Metals
BGTank-NW __, SW __	BGTank-NW __, SW __ -SS-SU0002-XRF	0-0.5			TAL Metals
BGTank-NW __, SW __	BGTank-NW __, SW __ -SS-SU0004-XRF	0-0.5			TAL Metals
BGTank-NW __, SW __	BGTank-NW __, SW __ -SS-SU0005-XRF	0-0.5			TAL Metals
SLTank-N __, W __	SLTank-N __, W __ -SS-SU0006-XRF	0-0.5			TAL Metals
SLTank-N __, W __	SLTank-N __, W __ -SS-SU0007-XRF	0-0.5		SLTank-N __, W __ -SS-SU0009-MS/D	TAL Metals
SLTank-N __, W __	SLTank-N __, W __ -SS-SU0008-XRF	0-0.5			TAL Metals

^a "NW __, SW __" and "N __, W __" - refers to a specific grid node that will be selected in the field.

FD - Field duplicate.

ft bgs - feet below ground surface.

MS/MSD - Matrix spike/matrix spike duplicate.

QA/QC - Quality assurance/quality control.

TAL - Target analyte list. Samples to be analyzed using EPA Method 6010B.

XRF - X-ray fluorescence.

FIGURES

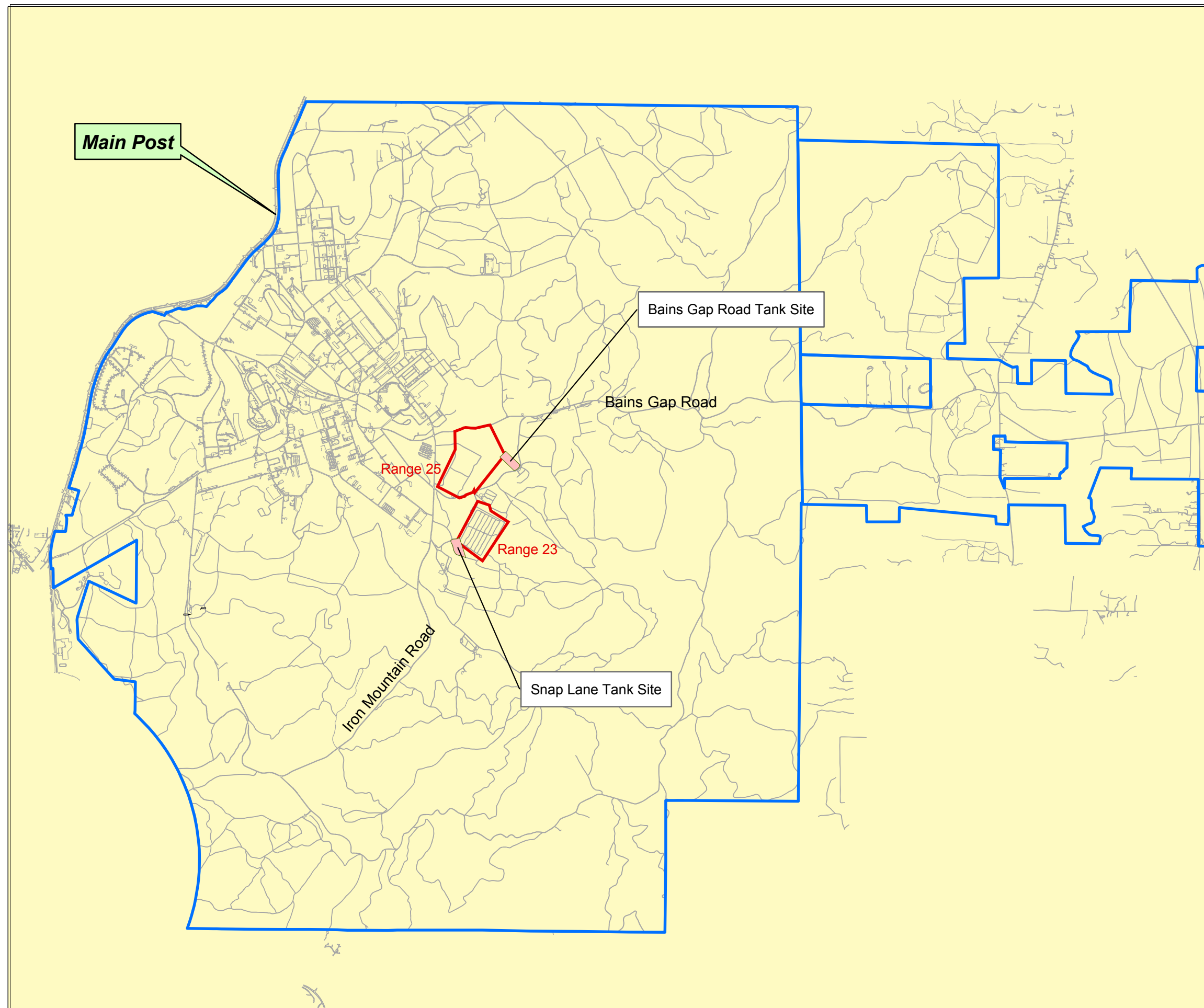
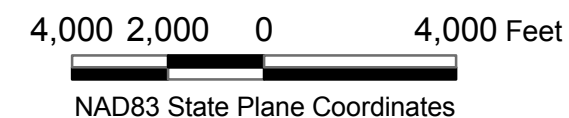
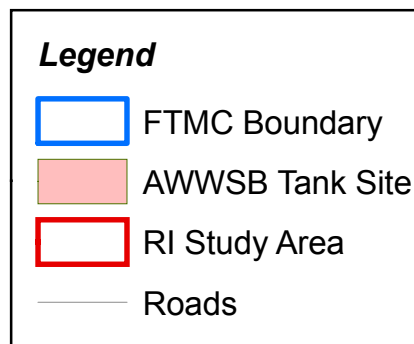


Figure 1
Location of AWWSB Tank Sites at the BBGR Ranges



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Figure 2

Grid Sample Locations
Bains Gap Road Tank Site

- Legend**
- Sample Grid (100' X 100' Grid Squares)
 - AWWSB Tank Site
 - RI Study Area
 - Buildings
 - Roads
 - Streams (Intermittent)
 - XRF Sample Location

100 50 0 100 Feet
NAD83 State Plane Coordinates



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Figure 3

Grid Sample Locations
Snap Lane Tank Site

Legend

- Sample Grid (100' X 100' Grid Squares)
- AWWSB Tank Site
- RI Study Area
- Buildings
- Roads
- Streams (Intermittent)
- XRF Sample Location

100 50 0 100 Feet
NAD83 State Plane Coordinates



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